

# University School of Milwaukee Technology Plan, 1998-2000

November 12, 1999

## Executive Summary

There are nine major themes which comprise USM's technology priorities:

<u>No.</u>	<u>Theme</u>	<u>Goals</u>					
		1	2	3	4	5	6
1	Faculty/Staff Training and Access		x				
2	Integration of Computing into Classrooms	x					x
3	Standards for Technology Skills	x	x				
4	Network Infrastructure			x			
5	Incremental Upgrading and Replacement of Networking, Hardware, and Software	x	x	x			
6	Administrative Systems			x	x		
7	Expansion of External Access to USM Resources					x	
8	Investigation of Full Student Laptop Computer Program	x					
9	“Technological Awareness”	x	x			x	x

USM also must address the following challenges, which are present in some part at all institutions:

1. The “Culture of Continual Change”
2. Physical Limitations
3. Issues of the Open Network Environment
4. Finances

The goals below, and their associated tasks, comprise the primary focus of USM:

Goal 1. USM students are exposed to a wide range of current computer technology as an integral component of grade level and subject area study. This exposure begins at the earliest levels of USM education and is expanded throughout the student’s experience at USM.

Goal 2. USM faculty and staff are trained and confident users of technology and integrate the application of technology into the academic program of the School.

Goal 3. The infrastructure of USM supports and promotes the necessary delivery of technology to the academic and administrative environments.

Goal 4. The administrative systems at USM provide the required performance, functionality, and integration to assist in the cost-effective management of the institution.

Goal 5. USM technology extends beyond the physical boundaries of the School, allowing families, alumni, and others access to the academic and social environment of USM.

Goal 6. The technological environment, at USM, including application to curriculum, is continually monitored so that it reflects a responsible blend of useable technology and academic/administrative applications.

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## Introduction

As technology evolves to a major role in home and work life, so it has likewise become a major component of education. The new resources of the Internet, whose resources are publicized, discussed and analyzed by virtually every popular and trade publication, and the ubiquitous and continually more affordable personal computer has resulted in millions of new computer and Internet users. Computers have moved from the realm of hobbyists and programmers to a new and expanded role in the center of American popular culture and entertainment. This development has positive and negative consequences, but the reality is that network access, whether from home, work, office, or school is now an integral part of many peoples' lives.

University School of Milwaukee, and indeed all schools, now stands in the middle of this remarkable development. Our students and families expect to have access to current technology and expect their children to have a meaningful exposure to this technology at school. Our faculty learn and implement new ideas to both teach technology and teach with technology. The School has committed significant funds to both build the infrastructure to support the world of networked computing as well as to upgrade and expand access for students, faculty and staff, consistent with promoting the educational goals of USM.

What follows is a plan for the next three years that will assist USM in maintaining the momentum in further developing and refining its own technology program. While much of the basic infrastructure work has been done, the continual demands of an integrated, dynamic, and comprehensive technology program require an immense amount of detailed work and study from a wide range of our community. The major tasks and challenges are now more varied and rely far more on the human components than the hardware and software.

USM has an immense amount of talent, expertise, and interest that it can call upon. To achieve these goals in a most dynamic environment, it is essential to inspire commitment and cooperation, encourage the continual learning of faculty, students, parents, and administrators, and gain favorable consideration from our financial contributors. It is our hope that all of the USM community: faculty, students, parents, and supporters will assist us in this crucial effort.

## Background

The history of technology at USM mirrors the experience of many institutions. Starting in the early 1980's, the early microcomputers were seen by certain faculty as holding promise as educational instruments. Enterprising faculty and staff developed the first academic applications for use in and by classes. In the mid-80's, the arrival of the Apple Macintosh as the basic computer for academic applications was accepted, and the first 'Mac labs' were established, where a classroom of students could work simultaneously. This status held for several years with a couple of generations of Macintosh in the academic area, while in the administrative arena, the arrival of PC based systems and early networking allowed the installation of local systems and the establishment of a parallel, IBM-compatible environment. It was during this time that USM established a number of fine academic projects which brought computing skills deeply into the academic program and resulted in a progression of exposure to computing as an integral part of the curriculum.

The arrival of the Internet, particularly the world-wide web, in the mid 90's provided the impetus for major change. Given the commitment of USM to using technology as part of subject and grade level learning, the recognition that the current local networks would not provide the robust environment that the new technology required led to plans to provide an integrated network which would serve both academic and administrative functions. Developments in the computer market place moved the School to migrate its academic environment to the PC-compatible world. The rapid changes and the need to more effectively plan its technology future resulted in the addition of technical support staff and a cooperative relationship between the academic and administrative components which now had far more in common than in prior years.

Over the past two years, USM has substantially upgraded its approach to technology. A number of cost-effective projects have provided a high-performance, platform-independent network backbone that reaches virtually all academic and administrative areas and provides access to Internet resources via a dedicated line.

USM now finds itself facing issues of a new generation of educational technology. The concept of the traditional 'scheduled lab' needs review as new electronic resources become integral components of study. These resources include CDs packaged with textbooks, web sites that are designed as integral components of classroom study, and other powerful resources that require frequent, spontaneous, and inseparable relationships between the class and access to technology. Furthermore, new options for communication between student and teacher, school and family, and student and external resources require a rethinking of the traditional specialized facilities.

In dealing with technology, the major challenge of integrating the new environment into the fabric of the School program is by no means complete. The tasks of managing the environment itself, reconciling with faculty competence and confidence, and accounting for continual change in the world of mainstream technology is intimidating and deceptively time-consuming. In particular, the continual updating of faculty and staff skills requires innovative solutions and commitment. The concept of 'training' must

migrate to a concept of ‘confidence, competence, and recognition,’ so that faculty can reasonably follow the rapid advances in software.

# University School of Milwaukee Technology Plan

University School of Milwaukee (USM) is an independent, non-sectarian, co-educational college preparatory school for students from pre-kindergarten through twelfth grade. In 2001, the School will celebrate its Sesquicentennial, tracing its roots to the German-English Academy of Milwaukee in 1851. Today we have 1,080 (1998-99) students and an average class size of 17 students.

University School of Milwaukee is a member of the Independent School Association of the Central States (ISACS).

## Philosophy and Mission (see Attachment 1)

As defined in our mission statement, University School of Milwaukee offers its students an educational environment in which

- high standards for academic performance, responsible behavior, integrity, and personal effort are valued;
- students are given opportunities to pursue excellence in academics, athletics, the arts, and extracurricular interests;
- diversity and the individual are respected; and
- students receive on-going support in their quest to become progressively independent and to meet the challenges of intellectual, physical, social, ethical, and aesthetic growth.

One of our eleven Guiding Principles is:

The use of a variety of instructional techniques, resources, and technological supports helps to meet the educational needs of students.

The integration of technology in our classrooms and across our curriculum is vital to developing the competencies required by students for their long term success.

In support of the above Guiding Principle, USM adheres to the following guidelines:

- The academic curriculum drives the technology.
- Our students and faculty will be competent and confident in using a wide range of resources; internal and external, traditional and electronic, regardless of environment.
- Access to external resources, particularly to new electronic resources and the Internet, is a vital component of the modern academic experience.
- USM will provide a reasonable upgrade path and timetable for its technological infrastructure to assure that students and faculty have access to current technology.



- The School community, including the faculty, students, administration and parents, is committed to continual learning about technology and its application to educational curriculum.

## **Faculty/Staff Training and Access**

USM faculty and staff must be reasonably confident and proficient in the application of technology tools in order to successfully use them in the classroom. To this end, continual opportunities must be provided which allow a motivated faculty member to develop the skills and confidence needed, with the goal of attaining a learning partnership. Technology-fluent students and teachers can assist each other as well as those students who are neither interested nor proficient with technology.

Given the time commitments of teachers and the continual evolution of technology, USM must develop workable ways to provide the training time that teachers need. There are a number of options used by USM and other schools which include: release time for classroom teachers with scheduled substitute teachers, summer training, flexible sessions held during prep time, the use of outside training organizations, school inservice days, etc. Another promising method is to develop teacher mentors who can work with their colleagues on a more informal and specialized level. The mentors are identified and trained and expected to provide the 'first line' of advice and assistance for their peers. Mentors can be particularly valuable within subject departments or grade levels.

University School also needs to seek out and hire faculty and staff who have an active interest and skills in technology. In addition, the School should encourage and support the improvement of skills when needed. A certain skill level with technology is necessary for all faculty and staff, and a plan is in place to define this level. It is also important that teachers are willing to continually learn and adapt, in order to effectively integrate technology into the curriculum and instruction.

## **Integration of Computing into Classrooms**

The great potential of electronic resources is diminished by the inability to use them effectively in a classroom due to classroom accessibility constraints. To remedy this, a current priority is to significantly increase the means to utilize computers within this environment. This includes wiring in the classrooms for both data and cable TV, and an ample supply of either television/data monitors or LCD projectors to allow classes to use these resources.

At present, the majority of USM computing takes place in computer labs or in the libraries. The scheduled computer lab has become a scheduling problem as more classes vie for computer time. Access to computing is still an 'event' requiring the moving of whole classes, with often little time for in-depth usage.

The 1998 purchase of laptops for US faculty is an example of providing the tools to the teachers so that they can develop the materials at home and at work, bring them into the classroom, and encourage the further integration of these resources into the curriculum. Laptops, for both faculty and students, are a particularly attractive method for expanding usage of technology by providing a personal mechanism for increased access, experimentation and growth.

This capability has become more important as the teachers' and students' use of presentation software (such as PowerPoint<sup>tm</sup>) increases. Moreover, we look forward to an environment where students use laptops regularly and require presentation equipment as part of their assignments.

In the Fall of 1998 third grade teachers will use a portable lab of DreamWriter<sup>tm</sup> computers to introduce and practice keyboarding skills with their students. Having ready access to the computers saves 'travel time', allows the students to practice daily, and enables individual students who have free time to use the computer.

## **Standards for Technology Skills**

USM will continue to develop standards for student technology skills, define the levels that are appropriate for USM, and then ensure that the appropriate skills are taught and reinforced. At this time, there is considerable debate in the academic world about how detailed such requirements can be in a fast-changing technological environment to the point where some schools are declining to define such expectations. The National Educational Technology Standards (NETS) project of ISTE has, as of July 1998, issued the 'National Educational Technology Standards for Students', which defines expectations from grades PK-12. While national standards must be flexible, it is clear that NETS has placed the burden of instruction on what may be termed 'technical competence' from grades PK-8, in some cases moving significant areas of instruction to lower grades.

USM is presently completing the definition of the Lower School curriculum, which includes the technology component. The Middle School is also engaged in a curriculum definition project that will likewise include the integration of technology within the curriculum. The Upper School has yet to begin a formal curriculum definition project, although the aspects of the technology program may be determined independently of a comprehensive curriculum study.

## **Network Infrastructure**

With the evolution of networking as the major component of modern systems, USM has made significant strides in the past two years to provide a high-capacity, flexible, and cost-effective

technical infrastructure to support present and future technology. While largely hidden, this system of optical fiber, designated distribution points, category 5 cabling, Ethernet switches, hubs, and routers has provided USM with widespread access to electronic resources. All labs, classrooms, libraries, and offices connect to this backbone using standard Ethernet protocol.

Furthermore, USM now has a number of Windows NT servers that provide the computing capacity for both administrative and academic uses. These servers include file servers, application servers, and special purpose servers. USM also runs its own Email, World Wide Web, and Proxy servers. These servers are maintained in a secure area with tape backup as well as backup power supplies.

Maintenance and management of these resources is a significant task, particularly as the reliance upon them increases and the pool of users grows to include the entire USM community. Network management is a critical task requiring persons with good technical skills, research ability, and communication skills.

## **Incremental Upgrading and Replacement of Networking, Hardware, and Software**

The current marketplace for technology presents a dilemma. While prices are genuinely falling, the upgrade requirements have increased, meaning that schools must continually upgrade their facilities. However, used equipment can often serve for several years. USM needs to upgrade its faculty environment, administrative computers, library, and lab computers on a reasonable and regular schedule, while realizing that some areas naturally need more capability than others. For example, computers upgraded in the US lab may have a good 'second life' elsewhere in the School.

USM still has a large number of older Macintosh computers that should be phased out in the next two to three years. Macintosh computers are still in use by our families, and in many respects provide a reliable function, particularly in the lower grades. However, repair parts are expensive and scarce for some Apple hardware.

## **Administrative Systems**

USM is in the process of upgrading its administrative systems, including admissions, student records, scheduling, grading, and business office software. USM has made the decision to rely on packaged software products rather than custom programming. Although a packaged application may not always provide specific features, the high recurring costs of custom programming is prohibitive for an organization of USM's size.

Given the availability of Windows-based computers for much of the faculty, there is also now the potential of integrating faculty access to student data, for grading, comments, attendance, and other administrative tasks.

## **Expansion of External Access to USM Resources**

The USM web environment can be expanded to become an important resource for school families. Given our large number of families with Internet accounts, we have a natural audience interested in the ability to access the School directly.

Some ideas include Web-based facilities for:

- Standard School communications
- Surveys and questionnaires
- Class notes
- Access to Library resources and licensed commercial databases
- Homework and makeup work
- Online forums

However, just as the current USM web site requires significant maintenance, new expansions require a new level of attention and maintenance in order to keep the site meaningful. For example, faculty would have to diligently maintain their own areas in order to provide accurate and timely information.

## **Investigation of Full Student Laptop Computer Program**

The concept of students with full-time access to laptop computers is exciting, and many schools in the United States have implemented such programs. The USM administration and faculty need to study this carefully, with significant input, so that it can present a realistic, affordable, and fair program to its community taking into account USM's constituency and market. A laptop program must be seen as a true improvement to education and not simply an expensive note-taking system. To accomplish this, faculty need to see other schools in action and develop the mindset that increased, regular computer usage is a tool that will add to the academic experience. Implementation of a student laptop program is a process which takes several years to fully realize and is based on total commitment of all parties involved.

## **“Technological Awareness”**

This is the ultimate goal and implies the widespread ability to see how available technology might be employed in a meaningful way. As faculty and staff become more proficient and confident in using technology, new uses are envisioned, discussed, refined, and implemented, not as ‘add-ons’ to study but as an integration into the learning process. Most often the best ideas

come from the most experienced teachers who come to appreciate the computer-tool. Ideas come from subject and grade levels and are tightly-bound to the needs of the subject/grade, although ideas are shared across levels and subjects. The technology coordinators assist in implementing and managing these initiatives and in maintaining consistency within the school environment. To be sure, the goal of consistently encouraging this on-going process is what is required to make a student laptop program effective in any classroom or school.

## **Major Challenges**

### **The “Culture of Continual Change”**

Technology change has put new stresses on institutions as they struggle to comprehend, communicate, and cope with the new realities of technology.

1. Change puts great pressure on teachers and staff for continual learning and refinement of knowledge. New versions of software and hardware and continual changes in networking and the Internet have added a new level of discord and confusion for some faculty to a point where some people have said “Enough! Why can’t I learn this once?” Staff (and students, to be fair) who feel that they have put in a reasonable amount of time learning computing are faced with yet more requirements and need to practice new skills. The reality that one is never ‘finished’ learning about this fast-changing and expanding world, and the growth of the Internet into a valuable source of information and research has added another level of concern to those who feel they are still struggling with the basics of the hardware and software.

2. The culture of change likewise has great financial implications. Although upgrading can be delayed or moderated, there is nevertheless a need to continually review what is in place and how the rapid changes in the technical and commercial environment need to be addressed. Schools are deeply affected by events in the computer marketplace. For example, older hardware which is perfectly ‘good’ may no longer be supported by the manufacturer or repairable only at a cost greater than replacement. Furthermore, since a school often deals with ‘class-sized’ units of 20 computers, replacing a few units only leads to a mixed collection which can be far more expensive and confusing to administer.

3. Change also greatly affects support. New versions of application and system software, operating systems, printing, and requirements of running a secure and robust network for students, faculty, and administration require significant skill, experience, continual study, and immense amounts of time. Maintaining legal licensing in such an environment is a baffling, expensive endeavor. Most of this work is invisible and is often seen only when there is a failure. Supporting faculty, staff, and students of varying levels of interest and expertise is another area where change is a constant and challenges the time constraints of the technology staff.

4. Another element of change is the large percentage of home computers. Gone are the days when a school ‘presents’ the grateful student with the chosen computing environment. Following the explosion of consumer computer purchase, USM families own computers and upgrade often, often to the latest hardware, software, and accessories. The School must account for this and

realize that its own decisions must recognize its community's trends while still serving the needs of the School and the concept of shared computers.



## **Physical Limitations**

USM has a number of physical limitations that make some areas of technology difficult. Small classrooms, sometimes shared, leave little room for multiple computers, and the current classrooms converted to labs are quite small, particularly in the Upper School where shoulder-to-shoulder labs allow little privacy. There is little room to expand any computing facilities without infringing on existing areas and common space which is also in short supply. Multiple labs also require support and troubleshooting staff.

Portable laptops labs or a student laptop program may help alleviate space problems and may actually free up current computer labs for other use, but the trade off is in making sure that classrooms can support multiple computers, including data and electrical requirements.

Conversely, USM's single building design has allowed many advantages, particular in economical wiring and networking. Forethought during the 1985 replacement of telephones has provided the critical data wiring to classrooms and offices, which would have been extremely costly as a separate project.

## **Issues of the Open Network Environment**

The availability of networking throughout the School brings also the challenges of appropriate usage and privacy. The Internet's tremendous potential to access valuable and unique information far outside the USM boundaries can be diminished by the real distractions such as excessive recreational usage, plagiarism, and incorrect, biased, pornographic and hate materials.

Moreover, the Internet has changed the very nature of locating and using materials. Students at home or at school with Internet access have the ability to locate vast amounts of materials. The method of reliance on traditional library research and printed texts has quickly evolved into a hybrid of text and online work, with the online work receiving more favor due to often superior search tools and convenience. In many cases, the students are leading the way, and this has provided a new dynamic in the classroom.

USM must balance the concept of open access with reasonable provisions for acceptable usage and privacy. USM currently uses a campus-wide filtering program, site logging, and individual logins to promote responsible Internet usage. In addition, several grades have integrated units on evaluating the quality of Internet sites.

## **Finances**

**USM has increased its commitment to funding technology substantially over the past 3 years. Funds are derived from a number of sources including tuition, contributions from the Parents' Association, individual gifts, and grants. The USM Development Office is an active participant in efforts to fund technology improvements at the School.**

**The technology budgeting process is cooperative, assembling and coordinating technology-related requests from departments, grade levels, the libraries, and from the academic and administrative technology departments.**

As the depth of technology increases at USM, the commitment to maintaining a reasonable level of support is vital. With the expansion of computing into virtually all classrooms, the pace of upgrading must be maintained. In the past, purchase of a set of computers for a lab for classrooms was a major event, but the reality is now that this needs to be a regular and expected expense, repeated at reasonable intervals. Given the current number of computers and their age, USM should be prepared to replace approximately 40 to 50 academic computers per year. Fortunately, the prices of computers has genuinely dropped to a point where this represents far less of an investment than in the past for considerably more capacity.

**USM intends to take full advantage of the Universal Service Discount (ERATE) if and when it become available, as well as other programs which assist in funding technology. However, USM will also analyze the source of funds for all programs so as not to compromise its status as an independent school.**

## **Goals and objectives**

**Goal 1. USM students are exposed to a wide range of current computer technology as an integral component of grade level and subject area study. This exposure begins at the earliest levels of USM education and is expanded throughout the student's experience at USM.**

**1.1 The standards for the integration of technology and the continual progression of technology skills into the curriculum of the School are well defined, monitored, and reviewed.**

**The scope and sequence is defined by classroom teachers, administrators, and technology specialists.**

**Department heads provide for the consistency of technology integration over time and between changing personnel.**

**1.2 All grade levels and subject areas are encouraged to consider technology as a vital component of and enhancement to the traditional classroom experience.**

**Projects involving technology are coordinated within a department/grade level.**

**New options for integration of technology are evaluated in conjunction with the technology specialists.**

**Teachers and technology specialists, by maintaining contacts with their peers, discover new ideas for the integration of technology in their classes.**

**1.3 USM students are exposed to current versions of mainstream software in the areas of word processing, spreadsheets, databases, web page building, graphics, and specialized subject applications.**

**Students are exposed to mainstream software at an early grade level.**

**The level of sophistication and integration of software increases as students move through the School.**

**USM maintains reasonable currency with versions of commercial software while maintaining legal licensing.**

**1.4 Students who enter USM are offered remedial opportunities to improve their computer skills.**

**Via summer school program offerings and other special programs, new USM students are able to improve or refine their computer expertise.**

**Electronic resources, including the Internet, are available to classrooms, offices, and other academic areas, and their use is integrated into the research support of the curriculum.**

**The libraries maintains school or campus subscriptions to a set of carefully selected electronic resources such as encyclopedias, journal indexing and abstracting services, and other databases. These resources are available on the School wide network in support of the curriculum.**

The library staff works closely with classroom teachers and technology specialists in discovering, analyzing and presenting new resources for class use, such as specialized databases, software, and Internet sites. These resources are available in the libraries, classrooms, and computer labs.

<p><b>Goal 2. USM faculty and staff are trained and confident users of technology and integrate the application of technology into the academic program of the School.</b></p>
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- 1. The USM faculty and staff have convenient access to suitable current technology, including hardware, software, support, and network access.**

***Classroom and/or office computers, presentation equipment, and specialized items such as scanners, audio-visual equipment, specialized printers, and specialized software are available.***

- 2. The evaluation process for USM faculty includes the assessment of the faculty members' use of technology in the curriculum.**

3. **Faculty and staff are provided with an aggressive and repetitive program of training and workshops to improve competence, confidence, and to introduce new technology.**

**“Opinion Leaders” are identified and recruited in departments and grade levels to assist in analyzing needs, communication with fellow teachers, and investigating new options.**

2. **USM faculty have ample opportunity for technology skills development via:**

**Scheduled in-service days that are used for technology education;**

**A generous staff development budget and time allowances for external opportunities;**

**A responsive internal network for classes, workshops, and individualized assistance;**

**A peer mentoring process to encourage faculty to investigate technology as a team;**

**Summer opportunities available for faculty training.**

2. **Expertise and basic confidence with technology is a consideration for employment. In particular, experience and willingness to incorporate technology in the classroom environment is valued highly.**
3. **New USM faculty receive an organized and comprehensive orientation to the technological environment of the School.**

**A checklist of expected technology skills for faculty is available and promoted through the faculty skills program.**

<b>Goal 3. The infrastructure of USM supports and promotes the necessary delivery of technology to the academic and administrative environments.</b>
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**3.1 USM utilizes mainstream, industry-standard technology in support of the academic and administrative program**

**A high-speed internal network utilizing industry-standard hardware and software provides network service to academic and administrative locations.**

**Fast Ethernet switches are used to maintain performance on the network and to minimize security exposure by reducing broadcast Ethernet.**

**USM maintains a T1 line for Internet access which is distributed via the internal network.**

**Standard servers and network operating systems are used to provide the administrative and academic applications.**

**USM is standardizing on the Microsoft Windows NT Server as its operating environment for servers. Other platforms, such as UNIX, are considered for specific applications.**

**All servers have sufficient backup and monitoring capability.**

**Network usage is monitored in order to keep servers and peripherals at the appropriate performance levels.**

**Trained support staff is available to provide assistance in the operation, maintenance, and repair of hardware.**

**Selected staff are certified for maintenance of key hardware such as computers, printers, and key network components**

**3.2 All academic and administrative locations are equipped for technology as needed including computer network and Internet access, cable television, and telephone.**

**Cat 5 level wiring is available in all necessary areas, including classrooms, offices, laboratories, and other areas.**

Where needed, additional hubs or switches are provided to further expand network access.

Future remodeling projects includes assessment of wiring and electrical service so as to provide additional capacity for future growth.

Cable television jacks are available in all classrooms.

Classroom presentation equipment, including televisions, LCD projectors, VCRs, laser disk players, and other presentation equipment is available, both permanently mounted or portable as appropriate.

*The campus has an integrated voice mail system.*

### **3.3 USM standardizes its technical environment as much as possible in order to achieve quantity of scale and to consolidate its support requirements.**

USM migrates its academic environment from the Apple Macintosh platform to the PC-compatible “Wintel” platform.

Migration occurs over several years as labs, classroom, and office computers are upgraded.

Cross platform applications and utilities are licensed where possible to ease the transition between platforms.

Displaced equipment is relocated or resold as appropriate.

Software equivalents are located and licensed to facilitate the change of environments.

### **3.4 Computer facilities, such as wiring, rooms, communication facilities, and software, as well as support staff and expertise are shared when possible between academic and administrative units.**

All systems are physically secure and all connections are well documented

### **3.5 An affordable upgrade schedule allows the School to maintain a sustainable level of current technology.**

Administrative, classroom, and lab computers are replaced on a schedule of between 3-6 years depending on the specific requirement of the department, division, specific function, or additional demands placed on the hardware.

**Goal 4. The administrative systems at USM provide the required performance, functionality, and integration to assist in the cost-effective management of the institution.**

**4.1 New administrative software is installed and implemented.**

USM installs and implements the BlackBaud software to provide integrated administrative systems

2. **Upgrading for administrative staff is in accordance with need and budget.**
3. **Continual training is available to new and current staff, including workshops, peer support, and a help desk**

**Goal 5. USM technology extends beyond the physical boundaries of the School, allowing families, alumni, and others access to the academic and social environment of USM.**

1. **USM maintains an active and up-to-date World Wide Web site for multiple purposes, including School promotion and information for the School community.**
2. **Dial-in facilities are available to provide remote access for the USM community to the USM.**
3. **Students and families use the School network for communication with teachers, classmates, and staff. School research facilities are available through the network.**

**5.3 USM has an integrated mail/bulletin board/conference facility for the communication between School classes and other groups.**



**Goal 6. The technological environment, at USM, including application to curriculum, is continually monitored so that it reflects a responsible blend of useable technology and academic/administrative applications.**

- 1. Technology Standards are regularly reviewed and reevaluated.**

*The focus of education at USM is not on specific software products and versions but rather on the building of skills that are applicable to the productive use of computing resources in general. Given the rapid progression of technology and software, the focus on 'principles over versions' cannot be overstressed.*

**6.2 The price/performance aspects of USM technology is continually monitored in the context of academic need, industry developments, and constituent needs. Planning and projections are made with extreme flexibility in order to account for unforeseen technological developments.**

**6.3 The following technological developments require continual attention, recognizing that rapid change may result in many more options and decisions:**

- 1. Laptops for students and the subsequent role of dedicated computer laboratories.**
- 2. Wireless networks in academic areas.**
- 3. Student/teacher/external conferencing capability.**
- 4. 'Network computing': server-based 'slim client' networking.**
- 5. Expanded Intranet services.**
- 6. Computer-based training for faculty and students.**
- 7. Specialized hardware/software for sciences, art, computer science, and graphics.**

**6.4 USM continually evaluates the financial requirements of a suitable technological infrastructure and support in light of total campus financial requirements and needs.**

**By continual comparison and communication with area schools and peer institutions, and organizations such as NAIS and ISACS, USM evaluates its own support of technology**

**6.5 USM maintains communication with constituents regarding technology**

**USM communicates its environment and requirements to families so that they can make informed decisions for home computing.**

## Expansion of Goals

### Goal 1: Curriculum and Instruction

No.	Item	1998-1999	1999-2000	2000-2001	Comments
1.1	Develop LS standards	Develop			Gr 1-4 completed
1.1	Revise LS standards		Revise		
1.1	Develop MS standards	Develop			
1.1	Revise MS standards		Revise		
1.1	Develop US technology standards	Develop			
1.1	Revise US scope & sequence		Revise		
1.1	Develop method for review & update of standards Across all divisions		Develop		
1.1	Monitor integration of technology w/ curriculum	ongoing			
1.3	Licensing for software is meticulously maintained	Ongoing	Ongoing	Ongoing	
1.4	Develop remedial plan for new students		x		
1.4	Develop keyboarding skills schedule		x		
1.5	Analysis of library needs in supporting the curriculum at all levels	x	x	x	LS – has standards

## Goal 2: Faculty Training

No.	Item	1998-1999	1999-2000	2000-2001	Comments
2.1	Review need for support equipment, such as printers, scanners, and specialized software	Ongoing			
2.2	Self Assessment of Technical Skills to all faculty	Develop	Distribute	Annual	This is a private document
2.2	Measures for assessment of faculty skills to be included in evaluation process		Develop	Implement	
2.2	Identify and orient "opinion leaders"	x	x	x	
2.2	Criteria for determining technology expertise to use in hiring process		Develop	Implement	This may include a questionnaire, or requirement for a portfolio.
2.2	Remedial plan for new and current faculty		Develop	Implement	
2.3	'Technology Day' for faculty		Begin		
2.3	Provide ongoing schedule of specific workshops for faculty on as-needed basis	Ongoing	Ongoing	Ongoing	
2.3	US - Informal sessions using laptops	Ongoing	Ongoing	Ongoing	
2.3	Provide "aggressive & repetitive" program of training and Workshops	Ongoing	Ongoing	Ongoing	
2.3	Investigate external training options (Manpower, etc.)	Investigate			
2.4	Review and refine School policy regarding inservice days for technology education, substitutes for training times, contractual issues for Summer training		x		

2.6	Standards of technical skills for faculty, plan to improve skills based on checklist results	Design	Distribute	Ongoing	
2.6	Plan to improve skills based on checklist results		Develop	Implement	

### Goal 3: Infrastructure

No.	Item	1998-1999	1999-2000	2000-2001	Comments
	Redesign Kohl Lecture Hall for technology		Investigate		
3.1	Migrate from Ethernet hubs to switches, including 100Mb where required	x	x	x	Incremental
3.1	Investigate funding assistance for T1 line	x			
3.1	Develop and revise upgrade/expansion plan for NT servers for both academic and administrative functions	annual	Annual	annual	
3.1	Rewire computer room – UPS system		x		
3.1	Refine, test, and document backup and security procedures	annual	Annual	annual	
3.1	Upgrade Internet Connect Router		x		
3.1	Provide reasonable monitoring capability for network, including server usage and network bandwidth	annual	Annual	annual	
3.1	Investigate further certification for support staff		x		
3.2	Maintain wiring infrastructure to support connections as needed and feasible	Ongoing	Ongoing	ongoing	
3.3	Continue migration to Wintel platform from Macintosh	US Faculty	US Mac Lab		
3.3	Identify replacement software for Macintosh as needed	Ongoing	Ongoing		As labs are upgraded and switched
3.4	Sharing of space	Ongoing	Ongoing	Ongoing	

3.5	See 'Replacement Schedule"				
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## Tentative Schedule for Academic Upgrades

Upper School	Last Upgrade	Type	Target Upgrade	Comments
PC Lab	Summer 1998	Pentium II	2000-2001*	
Mac Lab	1993-97	Mixed Macintosh	1999*	Rep
Faculty Offices/ classrooms	Summer 1998	Pentium laptops	2001	
Faculty Workroom	Summer 1998	Printer	Indef.	
Classroom presentation	Summer 1998	27" monitors, some projectors	Indef.	
<b>Middle School</b>				
2 <sup>nd</sup> floor lab	Summer 1996	Pentium	2000	from
Lower MS/LS Lab	Summer 1998	Pentium (from US – 1996)	2001	From
Classrooms	Summer 1997	Pentium	2001*	Lap
Classroom presentation		Monitors, Some projectors	Indef.	
<b>Lower School</b>				
Classrooms	1994-5	Mac 575s	1999	PCs
Lower Lab	1998	Mac LC III (moved)	1999 (move)	Son
Lower Lab 2	1998	Mac LC II (moved)	2000 (move)	
Classroom Presentation	Summer 1998	27" monitors	Indef.	

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## Goal 4: Administrative Systems

No.	Item	1998-1999	1999-2000	2000-2001	Comments
4.1	Install BlackBaud School Administration System (Admissions & Registrars' Office)	x			
4.1	Coordinate with academic training as possible				
4.1	Business Office – Virtual Office (imagining system)	x			
4.1	Business Office; BlackBaud Bus.Off. Software (General Ledger, Accounts Payable, Student Billing, School Store, Fixed Assets)	x	x	x	
4.1	Human resources software	x	x		
4.1	Training for administrative staff	ongoing	ongoing	ongoing	
4.1	Develop computer literacy checklist for new hires		x		

## Goal 5: External Access

No.	Item	1998-1999	1999-2000	2000-2001	Comments
5.1	Continue maintenance of active USM web site	Ongoing	Ongoing	Ongoing	
5.1	Investigate expansions to web site, such as online surveys, etc.	x	x	x	
5.2	Evaluate, test, and implement direct dial-in to the USM network	x			
5.3	Evaluate and determine options for interactive 'groupware' conferencing software that may be used by the School community.		x		
5.3	Expand access to class-related materials for study materials, homework etc.	x	x	x	
5.4	Provide updates and questionnaires to School families	x	x	x	

## Goal 6: Monitoring of Environment

No.	Item	1998-1999	1999-2000	2000-2001	Comments
6.1	Determine mechanism for ongoing evaluation of our use of technology in the curriculum	x			
6.2	Develop and refine schedule for the reasonable upgrade of lab, office and classroom facilities	x	x	x	
6.3	Visit other institutions	x	x	x	
6.3	Investigate laptops for students and the subsequent role of dedicated computer laboratories	x	x	x	
6.3	Investigate 'Network computing' server-based 'slim client' networking		x		
6.3	Wireless networks in academic areas		x		
6.3	Expanded intranet services		x		
6.3	Computer-based training for faculty and students		Investigate		
6.3	Student/teacher/external conferencing capability		x		
6.3	Specialized hardware/software for sciences, art, computer science and graphics	x	x	x	

# **Attachments**

## **Attachment 1**

### **USM Philosophy Statement**

#### **Mission**

University School of Milwaukee offers its students an educational environment in which

- high standards for academic performance, responsible behavior, integrity, and personal effort are valued;
- students are given opportunities to pursue excellence in academics, athletics, the arts, and extracurricular interests;
- diversity and the individual are respected; and
- students receive on-going support in their quest to become progressively independent and to meet the challenges of intellectual, physical, social, ethical, and aesthetic growth.

#### **Guiding Principles**

Educational decisions and goals at USM are based on several guiding principles:

- Students become competent readers, writers, listeners, speakers, thinkers, and problem solvers through their own personal efforts with the guidance of teachers and the support of parents.
- A skills-oriented, process-centered, and knowledge-based curriculum which actively engages students in learning can foster the development of higher level thinking.
- The use of a variety of instructional techniques, resources, and technological supports helps to meet the educational needs of students.
- Students need a developmentally appropriate curriculum.
- The school community must have high standards and expectations for learning and behavior which should be modeled by faculty, parents, and administrators.
- Faculty and parents should hold students progressively more accountable for their own learning and behavior.
- Teachers who are well-trained in their disciplines and who participate in on-going learning are the cornerstone of our community of learners.
- A physically and emotionally safe environment allows students and faculty to express their ideas and grow intellectually.
- The School encourages diversity in its student body and faculty and requires mutual respect among all its constituencies.
- The School fosters an ethical and supportive community by emphasizing respect, honoring, values, and practicing service to the school and the community.
- The School values the support and the involvement of parents.

#### **The Goals of University School of Milwaukee**

**In its program, the School strives to develop;**

- Students who have the knowledge and skills to be confident, progressively independent learners.
- Students who are committed to purposeful study and the pursuit of excellence
- Students who are physically and emotionally healthy.

**In its community, the School seeks to nurture;**

- Students who are active in the extracurricular life of the School
- Students who relate to others with respect, honesty, cooperation, and kindness.
- Students who value and practice service to others.

*Approved by Faculty and Administration*

*Endorsed by Board of Trustees*

*September 1995*

## Acceptable Use Policy, University School of Milwaukee

The computer facilities at University School are for educational use. Many University School computers have access to the Internet and thus the World Wide Web, library catalogs and other remote resources. Parents/guardians and students must realize that use of such networks allows us access to world-wide information. This is a tremendous resource, and much of this information is academically valuable; however some sites are controversial, unsubstantiated, and inappropriate for University School's environment. USM will make an effort to monitor the use of the Internet at School and to this end has installed software that restricts access to some sites. University School, however, cannot in all cases guarantee the appropriateness of material that students may find and use, and cannot be responsible for appropriate home use of Internet resources. It is the responsibility of the parents/guardians to help their student(s) understand what is acceptable for their family and University School.

The guiding principle used to determine appropriate contents of Internet sources is:

*“Anything that is appropriate in the classroom is appropriate online and conversely, anything not appropriate in the classroom is not appropriate online.”*

In addition to this general principle, below are specific rules for online use;

- The security of a system relies on the combination of the logon and confidential password. **Never** let someone else use your account or password. **You is held responsible for all activity on your account.** If you believe your account has been compromised, notify a faculty member immediately to have the account suspended and/or the password modified.
- Never give out your address or phone number to people you meet online.
- Never misrepresent yourself.
- Never harass other users or compromise their right to privacy by revealing their home address, phone number, or other personal information.
- Avoid online services and areas that are not appropriate for USM.
- Learn what is proper etiquette for your online connection(s). Be polite and respect other people. What you write reflects upon you.
- Do not use USM computer facilities for any commercial enterprise, or for the infringement of copyright laws.
- USM policies regarding intellectual property and plagiarism are fully applicable with electronic materials and is enforced.
- Do not download, store, or install any licensed software on the USM network. Any such software is subject to immediate removal.
- Remember that any online correspondence will carry the USM domain as part of the address and thus is a reflection on the institution.
- Any attempt to change or tamper with the system software, compromise security, circumvent restrictions, or otherwise inhibit the workings of the USM network, including demonstrating such techniques to others, is treated as vandalism and will result in immediate removal of access privileges, in addition to possible further disciplinary action.

USM reserves the right to deny access to all computer facilities and computer accounts for students who violate the above rules. Students are subject to all USM rules and policies, including those found in handbooks for faculty and students, and are thus subject to the same disciplinary system as for any other violation.

Students and parents should be aware that USM network activity, including Internet access and files stored on the network, may be monitored and/or logged randomly or systematically, and that all materials stored on the USM network may be subject to access for security and backup purposes.

### Parental Approval Form for Internet Access

Parent or Guardian:
I have read the above information and give (student's name)_____ permission to use the Internet. I am aware that pornographic, controversial, and inappropriate material may be available and I have talked with her/him about the proper use of online information.
Parent/Guardian (please print)_____
Signature: _____ Date: _____
Student:
I have read the above information, and the "Computer Usage Policy" in the handbook. I also have talked with my parent/guardian about Internet usage. I agree to follow the guidelines set by the USM and my parent/guardian.
Student Signature: _____ Date: _____

## **USM Technology Committee, 1998-99**

Simon Bailey	Assistant Head, Upper School
Judy Bloch	Director, Learning Center
Randy Dean	Director of Development
Paul Greeney	Upper School Faculty, US Science Dept. Chair
Carolyn Lengh	Assistant Head, Lower School
Jim Lowrey	Director, Academic Technology, Upper School Technology
Trudi Marino	Head, Computer Services
Margaret Rossetto	Upper School Librarian, Library Dept. Chair
Kathy Sheehan	Middle School Faculty, Technology
Sue Sterling	Lower School Faculty, Technology
Chuck Taft	Middle School Faculty, MS History Dept. Chair
Charlie Wright, Jr.	Trustee